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NASA Procedural Requirements

COMPLIANCE IS MANDATORY

NPR 7120.9

Effective Date: March
11, 2011

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March 11, 2016

[Printable Format \(PDF\)](#)

Request Notification of Change

(NASA Only)

Subject: NASA Product Data and Life-Cycle Management (PDLM) for Flight Programs and Projects

Responsible Office: Office of the Chief Engineer

| [TOC](#) | [Preface](#) | [Chapter1](#) | [Chapter2](#) | [Chapter3](#) | [AppendixA](#) | [AppendixB](#)
| [AppendixC](#) | [AppendixD](#) | [ALL](#) |

Preface

P.1 Purpose

- a. This NASA Procedural Requirements (NPR) directive describes the responsibilities and requirements for space flight programs and projects to effectively manage authoritative data that defines, describes, analyzes, and characterizes a product throughout its life cycle, including, but not limited to, engineering, design, test, procurement, manufacturing, operational, and logistics data, and closeout for the product.
- b. The term "Product Data and Life-cycle Management" (PDLM) is used to describe these capabilities needed to support evolving product maturity within a program. Effective PDLM requires the robust execution of data management, documentation management, and configuration management activities in accordance with NPR 7123.1, NASA Systems Engineering Processes and Requirements, to ensure that the right data is available to the right people at the right time.
- c. PDLM implementation has the following goals for programs and projects:
 - (1) Ensure that authoritative data are captured, stored, and catalogued per identified requirements for retrieval with the necessary data ownership and usage rights.
 - (2) Guide programs toward data management strategies that are agile and flexible.
 - (3) Ensure near real-time data queries, searches, and exchanges.
 - (4) Ensure consistent, repeatable use of effective PDLM processes, best practices,

interoperability approaches, and methodologies.

- (5) Enable configuration and data management of product definition data (PDD).
- (6) Facilitate development, documentation, and use of common vocabularies for important communities of interest.
- (7) Provide a mechanism to determine which PDD are authoritative for specified purposes and to ensure the integrity of that data.
- (8) Designate authoritative data producers and sources, including both contractor- and Government-developed engineering and programmatic product-related data.
- (9) Identify state of data (e.g., in work, under review, released, or another state such as approved) and its relationship to the product design.
- (10) Increase the probability of mission success by managing the risk associated with data interchange and integration across disparate systems both internally and externally.
- (11) Ensure access to PDD by programs and projects for heritage purposes in accordance with NASA Policy Directive (NPD) 1440.6, NASA Records Management, and NPR 1441.1, NASA Records Retention Schedules.

P.2 Applicability

a. This NPR is applicable to NASA Headquarters and NASA Centers, including Component Facilities and Technical and Service Support Centers. This language applies to the Jet Propulsion Laboratory, other contractors, grant recipients, or parties to agreements only to the extent specified or referenced in the appropriate contracts, grants, or agreements.

b. This NPR applies to the following:

- (1) All current NASA space flight single-project and tightly coupled programs and their projects subject to NPR 7120.5, NASA Space Flight Program and Project Management Requirements, that are already under way and have not passed program key decision point (KDP) 0 or project KDP B (defined in NPR 7120.5) as of the effective date of this NPR.
- (2) All future NASA space flight single-project and tightly coupled programs and their projects subject to NPR 7120.5.
- (3) Reimbursable space flight programs/projects performed for non-NASA sponsors. Any tasks or efforts performed in support of NASA space flight programs/projects or reimbursable space flight programs/projects performed for non-NASA sponsors not directly identified within the applicable program PDLM plan should comply with the appropriate Center PDLM requirements.

c. Any waivers or deviations to this NPR are approved by the NASA Chief Engineer or Agency Chief Information Officer (CIO) as primary or alternate approver as follows:

- (1) Chapter 2: NASA Chief Engineer as primary and Agency CIO as alternate.
- (2) Chapter 3, Sections 3.1, 3.3, 3.4, and 3.5: NASA Chief Engineer as primary and Agency CIO as alternate.

(3) Chapter 3, Section 3.2: Agency CIO as primary and NASA Chief Engineer as alternate.

d. It is recommended that this NPR be considered for use in all other NASA programs and projects to help establish coordinated agreements between program/project managers and PDLM providers as early in the program or project life cycle as possible.

e. In this document:

(1) A requirement is identified by "shall."

(2) A good practice by "should."

(3) Permission by "may" or "can."

(4) Expected outcome or action by "will."

(5) Descriptive material by "is."

P.3 Authorities

a. NPD 2800.1, Managing Information Technology.

b. NPD 7120.4, NASA Engineering and Program/Project Management Policy.

P.4 Applicable Documents

a. NPD 1440.6, NASA Records Management.

b. NPR 1441.1, NASA Records Retention Schedules.

c. NPR 1600.1, NASA Security Program Procedural Requirements.

d. NPR 2810.1, Security of Information Technology.

e. NPR 7120.5, NASA Space Flight Program and Project Management Requirements.

P.5 Measurement/Verification

Compliance with this document is verified by submission to responsible NASA officials of the initial preliminary program PDLM plan (for new programs, this is by KDP 0 System Definition Review), upon major updates as defined in section 1.5.4 of that plan, and by internal and external controls. Internal controls include audit, review, and assessment processes defined in NPD 1200.1, NASA Internal Control. External controls may include external audits and reporting requirements.

P.6 Cancellation

None.

/S/

Michael G. Ryschkewitsch
NASA Chief Engineer

| [TOC](#) | [Preface](#) | [Chapter1](#) | [Chapter2](#) | [Chapter3](#) | [AppendixA](#) |
[AppendixB](#) | [AppendixC](#) | [AppendixD](#) | [ALL](#) |

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